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# Self-directed teams: A cost-benefit analysis of autonomy level

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U.S. organizations face an increasingly competitive global environment. U.S. average business productivity has historically grown very slowly (Peters, 1987). By the mid nineteen-eighties Japanese and Western European manufacturing productivity growth rates had more than doubled those of the U.S. (Peters, 1987). Per capita GNP places the U.S. below Japan and Western European nations such as Switzerland, Sweden, and former West Germany (Lewis, 1993).

According to Peters (1987) the principal source of U.S. economic troubles is the drastic change in global competitive conditions. Worldwide consumers demand higher quality products, better service, and increased flexibility from organizations. American industry, born of a mass production environment, has long focused on the quantity and cost of outputs over quality. U.S. organizations must now overcome this paradigm in order to compete effectively in current markets.

Progress has been made in recent years. Studies released in 1994 indicate that U.S. industry has recovered technological and market leadership in several important areas (Tyson, 1995). A study conducted by management consultants McKinsey and Company reports that the U.S. possesses the most productive employees of any nation (Gerstenzang, 1995). One possible explanation for these improvements is the shift to more employee empowered organizational structures.

The widespread desire to push more decision-making authority down the organizational ranks to the lowest levels is a new phenomenon in the U.S. (Holpp, 1994). American tradition has been to minimize the role of labor through extreme specialization of jobs (Peters, 1987). Increased competition, technological change, and new worker demands require organizations to focus on empowering work forces in order to succeed (Wellins, 1992). According to Peters (1987), organizations' failure to draw on the American work force's potential has historically been the principal reason for failure in world-class competition.

To address the changing global environment U.S. corporations have turned to participatory and team-oriented work structures (Nahavandi & Aranda, 1994). Self-directed teams (SDTs), the most sophisticated form of employee involvement in common practice, continue to grow in popularity (Estrada, 1994; Maurer, 1992). SDTs are defined as a group of five to fifteen multiskilled individuals collectively responsible for an entire product or task. Hoerr (1989) predicts that SDTs are the *wave of the future*. Manz and Sims (1993) claim SDTs rival in importance any organizational development to come along since the industrial revolution. Peters (1987) contends that SDTs should become the *basic organizational building block*.

SDTs can potentially provide tremendous benefits but only when properly planned. In a 1990 national survey forty percent of the 862 executives surveyed cited lack of planning as a significant barrier to SDT success (Wellins & George, 1991).

Hiam (1992) states that planning is *everything*. Caudron (1993) asserts SDTs require an enormous amount of planning.

Cost-benefit analysis is a valuable planning tool. Since fully autonomous teams are not ideal for every organization, a cost-benefit analysis should be conducted to determine the optimal level of SDT autonomy. It is essential that this analysis be performed prior to SDT implementation to prevent unnecessary spending and provide employee direction.

This paper will present a review of current SDT literature. First, characteristics of SDTs as well as their benefits, costs, and barriers will be examined. The importance of planning for appropriate autonomy levels will follow. Cost-benefit analysis as a planning instrument will be presented. A case study of a U.S. assembly plant having performed a cost-benefit analysis prior to instituting an SDT organizational structure--John Deere Commercial Products, Inc.--will be provided. Finally, a discussion of how the case study findings can be applied to other organizations will conclude.

## LITERATURE REVIEW

### SELF-DIRECTED TEAMS (SDTs)

The rapid spread of SDTs within U.S. companies began in the mid-to-late 1980s, although a few efforts date back to the 1960s and 1970s (Hoerr, 1989). Two historical trends influencing the American idea of SDTs are the sociotechnical systems theory of Europe and the quality circles typically identified with Japan

(Sims & Lorenzi, 1992). This influence is partially attributable to the success of U.S. global competitors (especially Sweden and Japan) with team-oriented management styles (Nahavandi & Aranda, 1994).

Sociotechnical systems theory emphasizes the joint optimization of both social and technical aspects of work (Emery & Trist, 1969). The focus of the theory is on *how* to structure work such that social and technical aspects function according to their own laws without interference from one another (Cummings & Molloy, 1977). According to Cummings and Molloy (1977), autonomous work groups represent an attempt to jointly optimize these two elements. The first formal quality circles (QCs) in the U.S. were imported from Japan in the early 1970s (Ledford, Lawler, & Mohrman, 1988). QCs represent only a simple form of self-management in that they lack decision-making authority and require little change to the organizational structure (Ledford et al., 1988; Manz & Sims, 1993).

As previously mentioned, the employees in SDTs are collectively responsible for an entire product or task. These employees possess a variety of skills and rotate jobs. They may or may not have direct supervisors (Hoerr, 1989). In fact individuals in SDTs receive numerous responsibilities historically assigned to management. Such teams fundamentally change how work is organized, and their implementation leads to flatter organizations (Hoerr, 1989). Individuals in SDTs plan as well as perform their work and meet regularly to discuss problems

(Harper & Harper, 1993). Reward systems are typically skill or team based rather than seniority based (Wellins & George, 1991). In an SDT-structured organization, company information such as sales figures, quality data, and productivity data is shared freely with all employees (Wellins & George, 1991). All of these characteristics lead to the potential realization of several benefits.

**SDT BENEFITS**

Benefits of SDTs include improved productivity, product quality, employee attitudes, quality of work life, and lowered costs. The most frequently reported benefit derived from SDTs is *improved productivity*. Wellins (1992) states that organizations utilizing SDTs can realize productivity improvements of fifty percent and more. Hoerr (1989) cites a more conservative thirty percent increase. A meta-analysis conducted by Goodman, Devadas, and Griffith Hughson (1988) supports the contention that SDTs have a positive impact on productivity. Therefore, though estimates vary in regards to productivity increase, it appears that the results are rarely negative or neutral (Hoerr, 1989).

SDTs provide additional benefits. Cohen and Ledford (1994) note most literature finds SDTs positively impacting *quality*. Frequently, as workers gain psychological ownership over a product or task, quality increases; this may be attributable to the employees taking more personal pride in their output (Manz & Sims, 1993). *Lower costs* often result. Bottom-line payoffs of

SDTs can be greatly supported by potential cost savings as high as fifty percent (Manz & Sims, 1993; Wellins, 1992). *Quality of work life* tends to increase in employee empowered SDTs as well as *employee attitudes* (Manz & Sims, 1993; Cohen & Ledford, 1994). All of these benefits, however, do not come without costs.

**SDT COSTS**

SDT-related costs include start-up expenses and continual training expenses. Large start-up expenses can reach ten to fifteen percent of salary for employees involved in the initial twelve to eighteen months of SDT implementation (Holpp, 1994). Many of these front-end costs are attributable to *training*; SDT employees must be trained in a wide variety of areas. Not only do employees require adequate technical expertise, but they often need training in group dynamics, communications, leadership, and problem solving (Wellins & George, 1991; Caudron, 1994). Training costs money but so does keeping workers from performing their regular jobs. Wellins (1992) notes that it is not unusual for SDT employees to spend twenty percent of their work time in training activities during the first year. Experts agree that training is a continuous process in SDTs (Wellins & George, 1991; Caudron, 1994).

In addition to monetary costs, situations may exist that aggravate the attempt to form SDTs. These barriers can be considered costs in that actions must be taken to combat their influences.

**BARRIERS**

Barriers to successful SDT implementation include lack of adequate planning, behavioral conflicts, distrust, management resistance, and team self-hindrance. As previously mentioned, *planning* is essential before SDTs are formed. Wellins (1992) notes the most critical factor in creating a successful team implementation is to value planning as a high priority. That is why numerous SDT attempts fail, due in part, to lack of adequate planning (Holpp, 1992). Unnecessary spending, employee frustration, and organizational misdirection may result from failed, inadequately planned SDT efforts.

*Behavioral issues* also complicate attempts at teamwork. North American culture values individualism and encourages identity on a personal level (Caudron, 1994). The preservation of individual rights is highly valued in the U.S. (Nahavandi & Aranda, 1994). In contrast, in Japan (where teams appear to be highly effective) workers value the preservation of harmony and emphasize the group over the individual (Nahavandi & Aranda, 1994).

*Distrust* additionally counters attempts toward successful SDTs (Manz & Sims, 1993). Poor management of industrial relations in the past often leads to companies' restricted credibility with production line employees. This, in turn, leads to difficulty implementing teams since trust is a vital component in the process. Middle management may view team development as more of a cost than an investment, and employees may see team

efforts as a management manipulation tool; this distrust will likely undermine the success of any team efforts (Manz & Sims, 1993).

*Management* may also hinder the acceptance of an SDT concept. An SDT-structured organization removes layers of middle management and therefore reduces opportunities for advancement (Manz & Sims, 1993). The move toward more self-directed teams also forces an inherent change in the management function. Individual managers must often shift to the role of coach and share their power with the team players (Estrada, 1994). Additionally management must be willing to somewhat overlook the Wall Street emphasis on short term results (Hoerr, 1989); SDTs are an investment not likely to yield immediate savings (Holpp, 1994). All of these issues encourage resistance to change.

Finally, problem solving and decision making within teams may be substantially hindered by SDT members themselves and the existence of "*groupthink*" (Neck & Manz, 1994). Janis (1972) adopted the term groupthink to describe the mode of thinking within a cohesive group setting, when conformity overrides realistic appraisals. SDTs are one specific type of group that is highly susceptible to groupthink due to cohesiveness and conformity pressures within the group. Since team members must interact with and rely upon other members in order to accomplish a task, a great deal of cohesiveness is likely to exist. Pressure to conform to general team views is probable due to employees' dependence on one another in effective completion of a

task (Manz & Sims, 1982).

Organizations that implement SDTs will experience the aforementioned costs and benefits to varying degrees. Examining SDT autonomy is one method that can be utilized to try to maximize the benefits and minimize the costs.

**LEVEL OF AUTONOMY IN PLANNING AN SDT**

A key factor in overall SDT planning is determining the appropriate team autonomy level. A study conducted by Thamhain (1990) cites autonomy to be one of fifteen critical success factors in striving for innovative team performance. The degree to which a job provides control and discretion to the individual(s) in carrying out the work is referred to as autonomy (Hackman & Oldham, 1976). The level of SDT autonomy varies among companies depending on the needs of the organization (Harper & Harper, 1993). The degree of autonomy afforded teams can be viewed as a continuum. Highly autonomous SDTs make essentially all decisions required to maintain a small business (Lawler, 1992). They hire and fire employees, determine pay rates, deal directly with suppliers and customers, set and maintain quality standards, and oversee inventory (Lawler, 1992). SDTs at the low end of the autonomy continuum are not involved in human resource decisions such as hiring and pay; they focus on work methods, quality, and production goals (Lawler, 1992). Other tasks that fall toward the middle of the continuum include training new team members, managing work and vacation schedules, settling conflicts

within the team, and assessing team performance (Gordon, 1992; Manz & Sims, 1993; Sims & Lorenzi, 1992).

The importance of autonomy as a key organizational variable is well established in the literature (Breaugh, 1985). Studies link autonomy with such significant variables as employee performance and motivation, job involvement, work satisfaction, turnover, and absenteeism (Breaugh, 1985; Spector, 1986). A meta-analytic study conducted by Loher, Noe, Moeller, and Fitzgerald (1985) held autonomy to be more highly related to job satisfaction than any other core job characteristic, i.e., task identity, task significance, skill variety, or feedback.

It is generally recognized that for most employees an increase in job autonomy will have positive effects on work satisfaction and behaviors (Breaugh, 1985). The rationale holds that a strong need for a feeling of control is inherent in every individual (Waterman, 1994). Individual control is shown to play an important part in human behavior (Spector, 1986). Langer (1983) suggests that if the human need for autonomy is unfulfilled, physical and psychological effects may follow.

Other evidence, however, suggests that individuals differ in terms of the importance they give autonomy (Langer, 1983; Steers & Braunstein, 1976). Hackman and Oldham (1976) discuss four core dimensions of work: autonomy, variety, task identity, and feedback. Those individuals who value personal growth and development at work show high work motivation, performance, satisfaction, and attendance when working on jobs high on the

four core dimensions. For some individuals, however, the increased responsibility and workload that accompany an increased level of autonomy are viewed negatively (Spector, 1986). Those weak on growth needs may be ineffective and dissatisfied in complex jobs requiring considerable autonomy (Hackman & Lawler, 1971). An increased level of autonomy may frustrate rather than motivate them, thus undermining efficient operation of the SDT (Lawler, 1992).

Total autonomy for individuals in an SDT may not be cost effective under certain circumstances, such as when there is only a simple work procedure, very low material costs, or an uneducated, unskilled work force (Lawler, 1992). Work that requires little coordination and problem solving may not motivate employees to perform, thereby necessitating external motivators and controls. Often elaborate reward systems, discipline systems, and hierarchies of supervision become necessary. Poorly educated work forces may be too expensive to train in the numerous aspects highly autonomous SDTs require.

Traditional SDT theory suggests that with enough training, teams can successfully accomplish any task (Caudron, 1994). Companies are learning from experience, however, that teams are more successful with control over certain tasks than they are with others (Froiland, 1993). Despite this discovery and the fact that continuous training is expensive, there does not appear to be an investigation taking place before SDTs are implemented as to the optimal degree of autonomy.

If circumstances suggest that full autonomy will not maximize an SDT's performance, a means for selecting the optimal autonomy level for a given time is necessary. Management should give this decision the same weight as other major policy decisions, perhaps more. Poor quality of decision-making procedures is cited as a major cause of unsuccessful outcomes (Janis, 1989). Therefore, utilizing cost-benefit analysis can assist in selecting the appropriate autonomy level.

**COST-BENEFIT ANALYSIS OF AUTONOMY LEVEL**

The essence of cost-benefit analysis (CBA) is that the worth of any course of action equals the excess of benefits over costs or sacrifices (Oxenfeldt, 1979). Although the CBA concept has traditionally been applied to the nonprofit sector, managers of commercial organizations can also make effective use of it as a decision tool (Granof, Bell, & Neumann, 1993). To ascertain the optimal autonomy level, management should estimate the benefits and costs of various levels and select the one offering the greatest net benefits.

A cost-benefit analysis performed prior to the implementation of an SDT structure results in a plan for team autonomy. This plan serves several purposes. First and foremost it helps clarify a typically ambiguous situation. Clarification demands a more concrete commitment and level of support from management. Apprehension and tension among employees may then decrease with a more focused vision of what is expected of

workers.

Knowledge of the desired autonomy level would prevent a potential waste of training dollars. For example, if it is known initially that SDT employees would not be responsible for hiring and firing, this type of training would not be necessary. In a poorly planned system SDTs may proceed under the assumption they will be fully autonomous and receive a wide variety of training up front. If management later determines there are tasks they cannot perform effectively, money spent on training for that function will be lost.

## CASE STUDY

### BACKGROUND ON JDCP

John Deere Commercial Products, Inc. (JDCP) is a U.S. assembly plant that conducted a cost-benefit analysis to determine the appropriate level of SDT autonomy. JDCP is a Deere & Company facility founded on the self-directed team concept. Located in Augusta, Georgia, the tractor assembly plant employs one hundred thirty individuals: thirty in administrative roles and one hundred on the plant floor. The five acre facility employs two assembly lines. Each line is divided into zones, the shorter line containing three zones and the longer line containing four zones. Each zone, on average, is made up of four work stations. All employees working within a particular zone comprise one SDT. Each zone/SDT rotates employees through a team leader position.

JDCP is a facility committed through its founding mission and philosophy to high quality products, safety, and a just-in-time philosophy. Assembly line employees perform daily quality audits of finished tractors to ensure that the units meet quality standards. The plant is soon to realize 500,000 safe work hours without a lost-time accident (the equivalent of two and one-half years). There are no storage areas for inventory; suppliers deliver items through one of thirty-six dock doors, closest to the appropriate assembly line zone.

The basis for the company philosophy is a highly motivated, team-oriented work force. Without SDTs, fulfilling the other aspects of the mission would be more difficult. The team environment is evidenced at JDCP by a gain-sharing pay plan, common uniforms for both administrative and assembly line employees, and a great deal of organizational flexibility.

**RESEARCH METHOD**

The basic instrument used to facilitate the JDCP case study was a detailed survey questionnaire. Specific, directed questions were developed, based upon the findings of the literature review, for the JDCP employees responsible for the SDTs. These questions addressed the key issues involved in SDTs: planning, autonomy, costs, and benefits.[1]

The survey was conducted electronically with a miniature

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[1]Survey questions are provided in Appendix A.

tape recorder mailed to JDCP along with the survey questionnaire. Two members of the original planning team responded to the same set of questions. This was done to attain two different perspectives on JDCP's SDTs. The first respondent, Bob Zippay, serves as JDCP's Plant Manager. He was the individual placed in charge of the JDCP project at its outset and was ultimately responsible for the creation of the SDTs. Matt Hurley, the second questionnaire respondent, serves as Human Resources Manager. He was hired by Mr. Zippay prior to the development of JDCP and took part in the planning for the organization.

Mr. Zippay and Mr. Hurley orally completed the questionnaire and returned the tapes within two weeks' time. The tapes were then transcribed. Both respondents committed approximately thirty minutes apiece to answering the questions. The transcript was then used to derive the answers to the posed survey questions.

**RESEARCH FINDINGS**

The individuals responsible for creating the teams at JDCP realized that adequately planning for SDTs influences their success level. Seven people constituted the JDCP planning team: one in the area of human resources, two in engineering, three in procurement, and one in upper management. These individuals spent one to two full days discussing the desired roles and characteristics of future employees. In initially defining the appropriate level of autonomy for their SDTs, the planning team

conducted a cost-benefit analysis. By identifying and comparing the costs and benefits of various levels of SDT autonomy, it was determined that the JDCP SDTs would not be fully autonomous. As a benchmark the planning team considered an SDT with one hundred percent autonomy to be responsible for hiring, firing, and promoting within the team, and determining wage levels, factory schedules, and product quality.

The planning team identified three main costs in considering fully autonomous SDTs: quality, training, and union repercussions. The cost of SDT employees determining every aspect of product quality was considered too high. The planners felt that certain issues, such as the quality of the sound of the tractor engine or transmission, should be left to more experienced salaried staff for two reasons. First, many of the newly hired assembly line employees were not familiar with agricultural equipment. Additionally, the planners felt certain quality issues could only be determined after years of experience in dealing with customers.

Training SDT employees in all areas necessary to be fully autonomous was considered too costly. For instance, the planning team did not feel all SDT employees could be trained to recognize every area of safety concern with a piece of agricultural equipment. An assembly line employee not familiar with tractors would not recognize the danger of an operator getting tangled up in an improperly guarded power take-off unit. JDCP could not afford to take such risks. Again the planning team felt safety

issues such as this could only be determined after years of experience in the field.

Creating an adversarial relationship with organized labor by implementing fully autonomous teams was also a high cost that management wished to avoid. Many labor unions are in strong opposition to SDT movements. They tend to view SDT environments as a means to abolish the labor movement. Upon recognizing that organized labor periodically challenges companies with fully autonomous SDTs, the planning team determined a confrontation such as this to be too costly.

The JDCP planning team identified several benefits to be gained from an SDT environment. These included labor cost savings, training and recruiting cost savings, higher productivity, and a higher quality of work life. They saw tremendous labor cost savings in fewer supervisory positions, fewer salaried positions, and employees hired with specific behavioral characteristics. The characteristics they deemed important--which include team cooperation, initiative, adaptability, and problem identification skills--allow for a tremendously flexible employee pool and a higher utilization of employees. SDT members are capable and willing to perform a variety of functions off the production line. They work with suppliers on shipment and quality issues, assist with line balancing (smoothing time elements of the production process), work with product specifications, and perform maintenance and renovation work within the facility. This leads to a tremendous

payback, both in terms of overall labor cost savings and challenging production line jobs. Savings in expenses related to workers' compensation and lost-time injuries were foreseen, due to the inclusion of safety consciousness in desirable employee characteristics.

The planning team envisioned training and recruiting cost savings if they could achieve a low employee turnover rate. They planned to accomplish this goal through two means: designing hiring and training processes to specifically select individuals well-suited to JDCP and the selected autonomy level, and providing challenging work in which employees are involved in decisions affecting their everyday lives. The hiring process involves a series of questions testing for both cognitive and manual skills, a series of interviews to identify the desired behavioral characteristics, and pre-employment training in which both JDCP and the job candidates receive an opportunity to evaluate each other. Above all, the JDCP planning team set out to hire intelligent people who would be promotable within the organization.

JDCP planners viewed higher productivity and a higher quality of employee work life to be two closely related benefits of SDTs. Their opinion was that when employees are not involved in work decisions, they will not be willing to cooperate with management or contribute to the process, leading to lower productivity and dissatisfied employees. As JDCP planned to involve assembly line workers in more everyday decisions (through

SDTs), they predicted higher levels of employee participation, interest in the work, and individualized ownership of the process. It was foreseen that these increases would greatly impact productivity and result in much more satisfied employees.

After identifying and comparing the various costs and benefits involved with high levels of SDT autonomy, the JDCP planning team, according to Mr. Zippay, "very knowingly and very consciously" selected an autonomy level between sixty and seventy percent. At this level SDT employees would be responsible for dealing directly with customers and suppliers, setting and maintaining certain quality standards, training new team members, settling conflicts within the team, some assessment of team performance, and overseeing inventory. It was determined that the SDTs would not be involved with hiring and firing, promoting, determining pay rates, or managing work schedules. At the sixty to seventy percent level assembly line employees have a significant amount of responsibility, organized labor does not feel shut out of the organization, and management retains responsibility for sensitive areas (such as total product quality and safety).

JDCP's teams have proved highly successful. Employee feedback demonstrates that team members are pleased with their jobs. In over four years of operation, JDCP has only had one employee grievance filed. The plant has attained high levels of product quality and on-time delivery. One of the tractors assembled at JDCP, based upon the benchmarks set out by Deere &

Company for all manufacturing/assembly units, has received the highest quality rating of all tractors currently being produced by John Deere. Costs have been well-maintained; the plant is below projections for labor cost. In only four years of operation JDCP has attained a high level of profitability. The achievement of worldwide materials flow has created a successful just-in-time facility.

## DISCUSSION AND CONCLUSION

Self-directed teams as an advanced application of employee empowerment are a fairly new phenomenon in U.S. organizations; therefore there is still much to be learned. A review of the literature in the area of SDTs demonstrates that numerous attempts to build SDT-structured organizations have succeeded. However, reports of failure also exist, and inadequate planning is cited as one reason for this. Despite the cost of failure and the importance of autonomy as a critical success factor, the literature does not appear to suggest initially planning for the appropriate autonomy level.

Fully autonomous SDTs are not appropriate for every organization. High levels of autonomy may not prove cost effective under certain circumstances, such as simple work procedures, low material costs, or a work force opposed to increased responsibility. By examining these factors and taking into account the costs and benefits of various levels of SDT

autonomy, an organization can effectively plan for the optimal autonomy level.

Conducting a cost-benefit analysis for autonomy prior to SDT implementation can provide a smoother transition into SDTs, cost savings, and a more solid base of management support. This analysis facilitates the customization of the SDT concept to the needs of the particular organization.

Organizations may encounter difficulties in implementing a cost-benefit analysis approach to planning for SDT autonomy. Often it is tempting to simply adopt an idea that other organizations have found successful, e.g., fully autonomous SDTs. It is more difficult and time-consuming to analyze and plan. Secondly, management may not recognize the need to conduct such an analysis or perceive it as adding value to the implementation of SDTs. Finally, the cost-benefit analysis approach is often regarded as a strictly quantitative method. Organizations may disregard it due to the difficulty in assigning numeric values to many autonomy-related variables.

In order to overcome these barriers organizations must recognize the *extent of change* that SDTs demand and the *importance of planning* for autonomy. Upon acknowledging the significant costs and benefits of adopting SDTs, organizations should realize the need for an effective planning tool. Firms additionally need to understand that a cost-benefit analysis takes into consideration qualitative as well as quantitative factors.

John Deere Commercial Products, Inc. was highly successful in utilizing cost-benefit analysis as a planning tool for SDT autonomy. Before implementing their teams the planners examined the costs and benefits of various levels of SDT autonomy. The planning team determined that the greatest benefit would be realized at a sixty to seventy percent autonomy level.

Certain limitations exist with regards to the case study. First, the method used to gather the necessary information (i.e., the questionnaire) did not allow for any clarification of ambiguous questions or immediate follow-up on the answers given. Personal interviews would have proved ideal. Second, a certain amount of bias may be inherent in the answers. The two individuals completing the questionnaire had a direct interest in the SDTs being studied. Perhaps an independent third party would have perceived the situation differently. Third, a report on the success of the SDTs would be more impartial if the SDT members' perceptions were considered.

Although JDCP's SDTs have proved successful at a sixty to seventy percent autonomy level, this does not mean that it is an appropriate level for similar organizations. Too many variables influence the determination of the ideal level to allow for an organization's success in adopting another firm's plan. However, the cost-benefit analysis approach can benefit any organization adopting SDTs. It allows a particular firm to examine its own variables and determine the autonomy level that will maximize SDT success in its own environment.

An increasing number of U.S. firms are adopting employee empowerment strategies to draw upon the talents of their work forces and remain globally competitive. A lesson can be learned from one organization's experience in developing SDTs: success can be attained if those responsible for team development will embrace the time-honored accounting tradition of cost-benefit analysis.

## Appendix A: SDT Questionnaire Developed for John Deere Commercial Products, Inc.

I. AUTONOMY AND PLANNING

1. On a scale from 0-10, how would you rank the autonomy level of Augusta's SDTs? (0 being no autonomy, 10 being fully autonomous)

2. Are there plans for the SDTs to become more autonomous over time?

3. Using the same 0-10 scale, is a 10 the ultimate goal for the SDTs?

4. Before the SDTs were even formed had management decided on an "ideal" level of autonomy for these teams?

   -What was this level?
   -Could you describe the process management went through to determine this level?
   -What was the reasoning behind the level chosen?
   -What kinds of costs and benefits were considered?

5. What types of benefits did you see accruing as you examined less than full levels of autonomy?

6. Did management determine up front that there were certain tasks the SDTs were not capable of effectively and efficiently handling?

7. What benefits were gained (or costs avoided) by planning for the ideal autonomy level before implementing the SDTs?

8. Do you think planning saved money which might have otherwise been spent on unnecessary training?

**Appendix A: SDT Questionnaire Developed for John Deere Commercial Products, Inc. (Continued)**

II. GLOBAL QUESTIONS

1. How would you define self-directed teams (SDTs) at JDCP?

2. What were the initial reasons for adopting SDTs in the Augusta facility?

3. Are the SDTs at JDCP responsible for:

   -Hiring and firing?
   -Dealing directly with suppliers and customers?
   -Determining pay rates?
   -Setting/maintaining quality standards?
   -Training new team members?
   -Managing work and vacation schedules?
   -Settling conflicts within the team(s)?
   -Assessing team performance?
   -Overseeing inventory?
   -Other

3a. More specifically, what are the <u>elements on control</u> given to the SDTs within these task areas?

4. Who serves as team leaders and what role do they play in the SDTs?

5. Could you explain the selection process you went through to choose team members?

6. What types of training have SDT members received?

   -Job skills
   -Problem solving skills
   -Team building/interaction skills
   -Improving quality
   -Other

**Appendix A: SDT Questionnaire Developed for John Deere Commercial Products, Inc. (Continued)**

III. BENEFITS/DETRIMENTS

1. In your own past experience with John Deere (without teams), do you believe JDCP's team structure is more productive than similar plants not utilizing SDTs?

2. How do you see the SDTs affecting the following:

   -Product quality?
   -Employee attitudes?
   -Organizational flexibility?
   -Cost levels?

3. Have you encountered the following types of difficulties with the SDTs:

   -Behavioral problems?
   -Distrust of management?
   -Unwillingness to accept increased responsibility?
   -Other

4. Have the Augusta SDTs proved "successful" in your opinion? What do you base their "success" on?

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